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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Graham P. Allaway, et al.  
Serial No. : 09/724,105  
Filed : June 25, 2001  
For : USES OF A CHEMOKINE RECEPTOR FOR  
INHIBITING HIV-1 INFECTION

1185 Avenue of the Americas  
New York, New York 10036  
January 9, 2002

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

INFORMATION DISCLOSURE STATEMENT

In accordance with their duty of disclosure under 37 C.F.R. §1.56, applicants direct the Examiner's attention to the following references which are listed on the PTO-1449 form attached hereto as **Exhibit A**. A copy of below listed reference 54 is attached hereto as **Exhibit 1**.

1. U.S. Patent No. 5,440,021, filed February 25, 1994, issued on August 5, 1995, Anan Chuntharapai, et al.;
2. U.S. Patent No. 5,504,003, filed March 8, 1994, issued April 2, 1996, Haodong Li, et al.;
3. Alkhatib, Ghalb, et al., (1996) "CC CKR5: A RANTES, MIP-1 $\alpha$ , MIP-1 $\beta$  Receptor as a Fusion Cofactor for Macrophage-Tropic HIV-1", Science 272:1955-1958;
4. Arenzana-Selsdedos, Fernando, et al., (1996) "HIV blocked by chemokine antagonist" Nature 383:400;

5. Bleul, Conrad C., et al., (1996) "The lymphocyte chemoattractant SDF-1 is a ligand for LER/fusion and blocks HIV-1 entry" Nature, 382:829-832;
6. Brenner, T.J., et al., (1991) "Relation between HIV-1 syncytium inhibition antibodies and clinical outcome in children", The Lancet, 337:1001-1005;
7. Choe, Hyeryun, et al., (1996), "The  $\delta$ Chemokine Receptors CCR3 and CCR5 Facilitate Infection by Primary HIV-1 Isolates" Cell, 85:1135-1148;
8. Cocchi, Florenza, et al., (1995), "Identification of RANTES, MIP-1 $\alpha$ , and MIP-1 $\beta$  as the Major HIV-Suppressive Factors provided by CD8+ T cells" Science 270:1811-1815;
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17. Klotman, et al., (1995), "Transgenic models of HIV-1", AIDS, 9(4):313-324;
18. Litwin, et al., (1996), "Human Immunodeficiency virus type 1 membrane fusin mediated by a laboratory-adapted strain and a primary isolate analyzed by resonance energy transfer", Journal of Virology 70(9):6437-6441;
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20. Moser, Bernhard, et al., (1993), "Interleukin-8 Antagonists Generated by N-terminal Modification", The Journal of Biological Chemistry 268:7125-7128.;

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31. Mosier, D.E., 1990, Immunodeficient Mice Xenografted with Human Lymphoid Cells: New Modules for in vivo Studies of Human Immunobiology and Infectious Diseases, Journal of Clinical Immunology 10:185-191.;
33. Poignard, P., et al., 1999, Neutralizing Antibodies ave Limited Effects on the Control of Established HIV-1 Infection in Vivo, Immunology, 10:431-438.;
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35. Stewart, G.J., et al., 1997, Increased Frequency of CCR-5  $\Delta$ 32 heterozygotes among long-term non-progressors with HIV-1 infection, AIDS 11:1833-1838.;

36. Cammack, N., 1999, Human Immunodeficiency virus type 1 entry and chemokine receptors: a new therapeutic target, Antiviral Chemistry and Chemotherapy, 10:53-62;
37. U.S. Patent No. 5,021,490, issued June 4, 1991 to Murrier et al;
38. Alkhatib et al., (1997), HIV-1 Coreceptor Activity of CCR5 And Its Inhibition By Chemokines: Independence from G Protein Signaling And Importance of Coreceptor down modulation, Virology 234:340-348;
39. Berger et al., (1999), Chemokine Receptors as HIV-1 coreceptors: Roles In Viral Entry, Tropism, and Disease, Ann.Rev.Immunol. 17:657-700;
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53. U.S. Patent No. 5,126,433, filed June, 30, 1992, Maddon, et al; and
54. International Publication Number WO 97/47319, International Publication Date December 18, 1997, PCT International Application No. PCT/US97/10619, filed June 13, 1997 (Exhibit 1).

The subject application is a continuation application of U.S. Serial No. 08/874,618, filed June 13, 1997. The above listed references 1-29 were submitted and considered by the United

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States Patent and Trademark Office in an Information Disclosure Statement filed January 4, 1999 in connection with U.S. Serial No.08/874,618. The above listed references 37-45 were submitted to and considered by the United States Patent and Trademark Office in a Supplemental Information Disclosure Statement filed January 19, 2001 in connection with U.S. Serial No. 08/874,618. The above listed references 46-53 were cited in an Office Action issued September 2, 1998 in connection with U.S. Serial No. 08/874,618. The above listed references 30-36 were cited in an Office Action issued November 19, 1999 in connection with U.S. Serial No. 08/874,618. Accordingly, under 37 C.F.R. §1.98(d) copies of these references are not required to be provided to the United States Patent and Trademark Office, since they were previously cited by, or submitted to, the United States Patent and Trademark Office in an application relied upon for an earlier filing date under 35 U.S.C. §120. A copy of the above-listed reference is attached hereto as Exhibit 1.

#### Summary

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorneys invite the Examiner to telephone either of them at the number provided below.



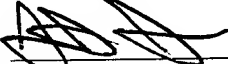
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Pursuant to 37 C.F.R. §1.97(b)(3), no fee is deemed necessary in connection with the filing of this Information Disclosure Statement. However, if any additional fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125

Respectfully submitted,



I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

 1-9-02  
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	US 5 4 4 0 0 2 1	8/5/94	Chuntharapai, et al			
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	US 5 0 2 1 4 0 9	6/4/91	Murrer et al.			
	US 5 1 2 6 4 3 3	6/30/92	Maddon, et al.			

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	WO 9 7 4 7 3 1 9	12/18/97					

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	Arenzana-Selsdedos, Fernando, et al., (1996) "HIV blocked by chemokine antagonist" <i>Nature</i> 383:400;
	Bleul, Conrad, C., et al., (1996) "The lymphocyte chemoattractant SDF-1 is a ligand for LESTR/fusion and blocks HIV-1 entry" <i>Nature</i> 382:829-832;
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	De Clercq, E., (1995) "Antiviral therapy for human immunodeficiency virus infections" <i>Clinical Microbiology Reviews</i> 8(2):200-239;
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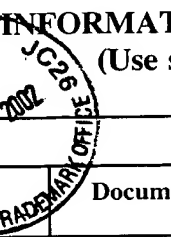
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